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THE FARM INDEX

U.S. Department of Agriculture/February 1972

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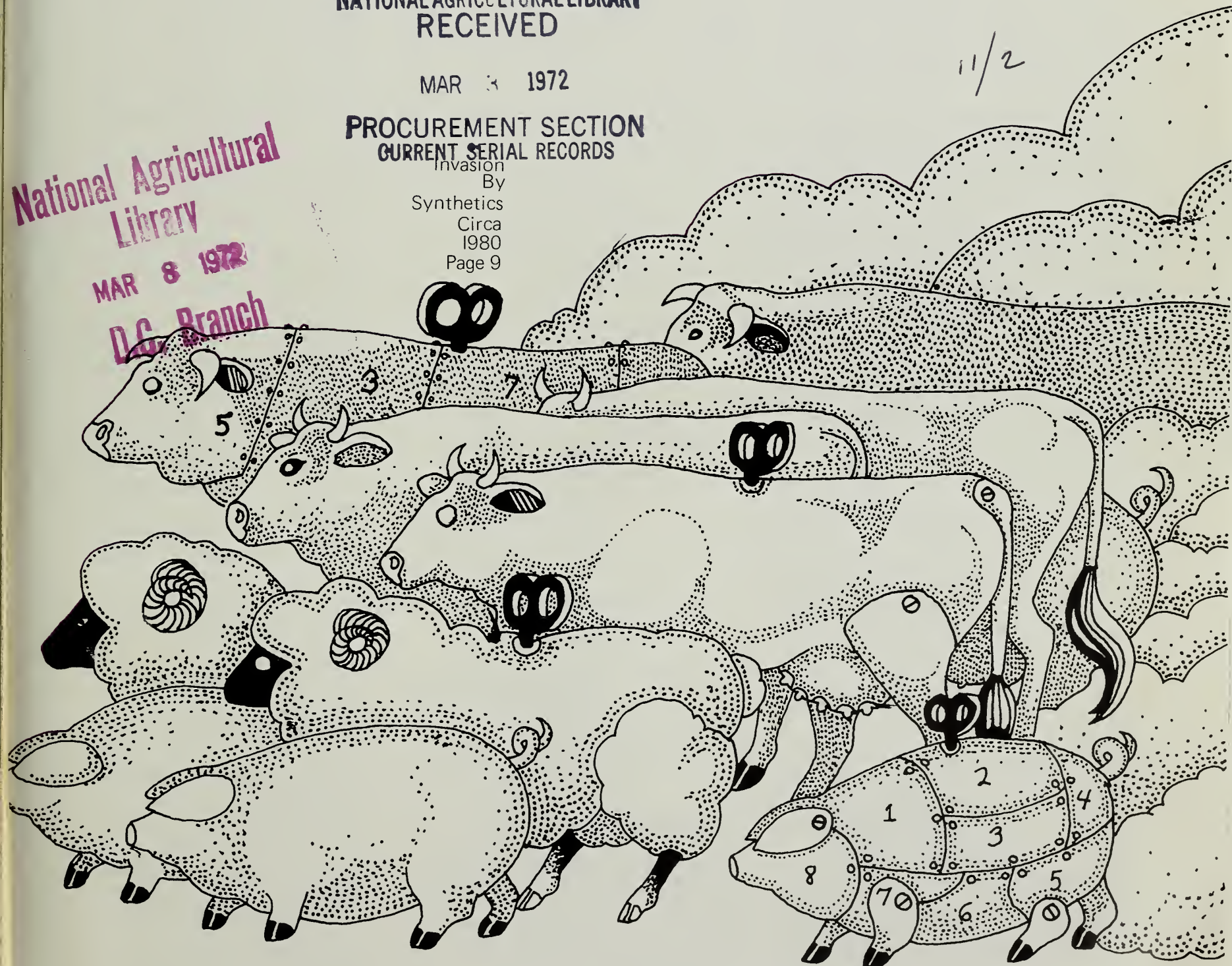
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"Unlike some types of prediction, successful outlook work is self-defeating. The outlook should influence farmers and industry to shift their intentions in accordance with the outlook. This then invalidates the outlook prediction—but also proves that the outlook has been of service to agriculture and business."

—Wayne D. Rasmussen and Gladys L. Baker, USDA historians, from their forthcoming book, *The United States Department of Agriculture*.

The U.S. Department of Agriculture rounds out a half century of outlook work when the 1972 National Agricultural Outlook Conference convenes in Washington, D.C. on February 22-24.

This year's meeting—the 50th in history—will focus on the 1972 prospects for global production and trade in farm products, and their meaning to us. Also on the docket are the usual look-ahead sessions on the U.S. economy in general and agricultural commodities in particular.

Since 1923 and the first Outlook Conference called by Agriculture Secretary Henry C. Wallace, the purpose of the annual gatherings has been to provide a means to get economic research findings out to the farmer and to those who service his needs.

As put by Dr. H. C. Taylor, who fathered the annual Outlook Conferences: "Our proposal was not to formulate an agricultural program but to draw a picture of the conditions with respect to the probable supply and demand throughout the competing area . . . The farmers were not to be told what to do but given the facts they needed in order to act intelligently . . ."

The character, if not the purpose, of these forums has changed over the years. For one thing, today's meetings are open to anyone who follows the fortune of American agriculture.

The first conference was held behind locked doors. Attendance was by invitation. But the wide-ranging professional interests of the participants of that first gathering on April 20-21, 1923, bear witness that even then, the

horoscope for farmers crossed many pathways of the U.S. economy.

Among others present at the meeting were representatives of National City Bank of New York; Armour and Co.; Harvard and Cornell Universities; Corn Belt Meat Producers Association; Chase Manhattan Bank; Institute of Economics of Massachusetts; Federal Reserve of New York; U.S. Department of Commerce; and the American Farm Bureau Federation.

This first Outlook Conference was shrouded in secrecy because it was there that the attendants reviewed the first report ever issued for farmers' planting intentions for the season ahead . . . and decided whether these

were in line with the prospective demand.

Other early outlook reports were also based chiefly on planting intentions. The reports were very specific. They made recommendations to farmers, and they sometimes raised hackles.

The 1923 report, for example, forecast a 12-percent increase in cotton acreage. Cotton prices took a nose dive about that time. Senator Tom Heflin of Alabama said it was the report "that broke the price; that inexcusable and indefensible estimate that was sent out reduced the price of cotton several dollars a bale, and it cost farmers of the South millions and millions of dollars."

1972 NATIONAL AGRICULTURAL OUTLOOK CONFERENCE

Jefferson Auditorium, U.S. Department of Agriculture

General Sessions			
Tuesday, February 22		10:30	Comparative Advantage, and U.S. Exports and Imports of Farm Products
8:45 a.m.	Opening of Conference	11:15	Export Programs
9:00	Welcome Address, Office of the Secretary	1:30 p.m.	Foreign Market Development
9:15	General Economic Outlook, Current Outlook for U.S. Agriculture, and Outlook for U.S. Trade in Farm Products	2:15	Implications of Expansion of European Community
		3:30	State Extension Programs in Foreign Trade
1:30 p.m.	World Monetary Relationships	Family Living Sessions	
2:15	World Agricultural Production and Trade in the 1970's		
3:15	The World Trade Environment	Wednesday, February 23	
Wednesday, February 23		10:30 a.m.—4:30 p.m.	
8:45 a.m.	U.S. International Policy for the 1970's	Thursday, February 24	
9:30	The Case for Agricultural Trade	8:45 a.m.—4:15 p.m.	
		Commodity Sessions	
		Thursday, February 24	
		8:45 a.m.—4:30 p.m.	

Sponsored by the Economic Research Service and the Federal Extension Service.

Contents

Again in 1927, a forecast of lower cotton prices coincided with a plunge in the market, and again many people pointed the finger at the USDA report. But while some farm organizations condemned official forecasting, others urged the Department to expand this type of activity.

Lloyd S. Tenny, chief of the Bureau of Agricultural Economics, defended USDA's position before Congress. Noting that cotton prices began to tumble a week before the 1927 situation statement was issued, he believed the prices fell because they had risen out of line with supply and demand conditions. He didn't go along with the view that USDA should present facts and let farmers decide for themselves. ". . . Facts without interpretation," Tenny contended, "mean nothing . . . Large business organizations employ statisticians and economists to collect and analyze such information for them. Six million unorganized farmers cannot do this themselves."

Regardless of who was right, from then on the outlook forecasts were worded more cautiously. They also became more general, with increasing emphasis placed on supply and demand trends and their likely impact on farm prices. Specific recommendations to raise or lower production were found less and less in the summary statements.

In 1925, to illustrate, the report said about corn that "an increased acreage . . . does not appear advisable." In 1931, the summary statement read—"With prospects for only a slightly greater demand for corn and with much larger supplies in prospect, it is probable that prices during the season beginning in November 1931, will average somewhat lower than during the present season."

The changing reports of the Outlook Conferences would be expected to reflect the changing health of the economy, both in the United States and around the world. To the participants in the 1931 Outlook Conference, much of the prognosis was grim.

"The situation at present . . . is clouded by an unusual combination of circumstances, chief among these be-

(Please turn to page 21)

FARM

MARKETING

RURAL

CONSUMER

FOREIGN

Martin Schubkegel
Editor

Diane Decker
Diana Morse
Walter M. Patrick
Staff Editors

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After nearly 3 decades of liquidation, our sheep herd is at an all-time low as hard times force growers to switch to cattle and other ventures with a better future.

"With his wool, his mutton, and the soft leather from his tanned hide, probably no other animal has aided man so much in his rise from savagery to civilization," *The National Geographic* magazine wrote in 1928. It predicted, "The growing world will insist on more sheep."

Indeed, the world's sheep flock multiplied rapidly during the last 4 decades, by almost three times to over a billion animals.

But in the U.S., sheep numbers ran against the global trend. Sheep

graze less and less on our range-lands: the men who once raised them have turned to more profitable pursuits.

In early 1971, the U.S. sheep inventory was reported at 19.6 million, down sharply from 33 million as recently as 1960. It marked the lowest sheep count in history. Complete data are lacking, but it's entirely possible we had more sheep in the days of the California Gold Rush than at present.

Sheep numbers will likely decline again in 1972. Lamb prices have slipped a little the last couple years. And the market prices of wool—source of about one-third of sheep growers' incomes—have been on the skids. Growers' prices for shorn wool

fell from 40–42¢ a pound, grease basis, in 1967–69 to 36¢ in 1970 and around 24 in 1971. A slight increase may be in prospect in 1972.

Actually, the final price growers get is above these market prices. Under the Wool Act of 1954, sheep producers are eligible for Federal incentive payments to make up the difference between the market price for wool and the incentive price. The incentive price through 1973 has been fixed at 72¢ a pound, the same as in 1970 and 1971.

The incentive payments have helped shore up ranchers' incomes. Nevertheless, producers view the lagging prices in wool markets as discouraging.

Both sheep and cattle numbers

Profit Potentials

As the sheep industry sees it, there's room for greater efficiency in the way sheep products are produced and marketed.

Productionwise, growers could concentrate on getting more wool per sheep, which has been practically stable in recent years. They could strive for reduced sheep losses from range predators, and for more efficient use of high-cost labor.

Profits could also be raised through improved lamb production per ewe. A study by USDA and Cornell University economists shows that as lambs sold per ewe rises from 1.2 to 1.8, net return to operators' labor and management moves from -\$6,700 a year to a high of \$32,900 for a 3,000-ewe flock if lambs are selling at \$28 per cwt.

Methods of getting wool from producer to mill need to be modernized. As put by one marketing economist, the domestic textile industry will use those fibers—and from whatever source—they believe best suits their needs, considering availability, price, conversion costs, and fashion trends.

For more marketing muscle, wool producers ought to better define what they're selling. One means is a wool classification system to tell the buyer about the wool lot's fineness, staple length, color, and other quality factors.

In the late 1950's, ERS in cooperation with industry sampled over 400 lots of wool, classified them by various quality specifications, and put them on the market. This experiment showed that when all bidders had the laboratory test results, the price differences for quality quoted in Boston were reflected in prices paid for these lots.

Such sample tests are costly, about \$50 per lot when the experiment was run. But a market classification information service becomes feasible by assembling wool into what's commonly known as merchantable-size lots. The costs per pound decline significantly as lot size decreases.

Of course, large-scale assembly of wool would require far fewer and larger wool marketing agencies ("wool supermarkets") than exist in today's market system. (2)

Even before this swing to cattle production, another threat to the sheep industry entered the picture—the rise of manmade fibers, which have caused sharp cutbacks in wool consumption.

Mill use of raw apparel wool has plummeted from the 1960–64 average of 255 million pounds annually to around 115 million in 1971. Use of raw carpet wool—all of which is imported—has been around 86 million pounds since 1967, well below the 1959–63 average of 159 million.

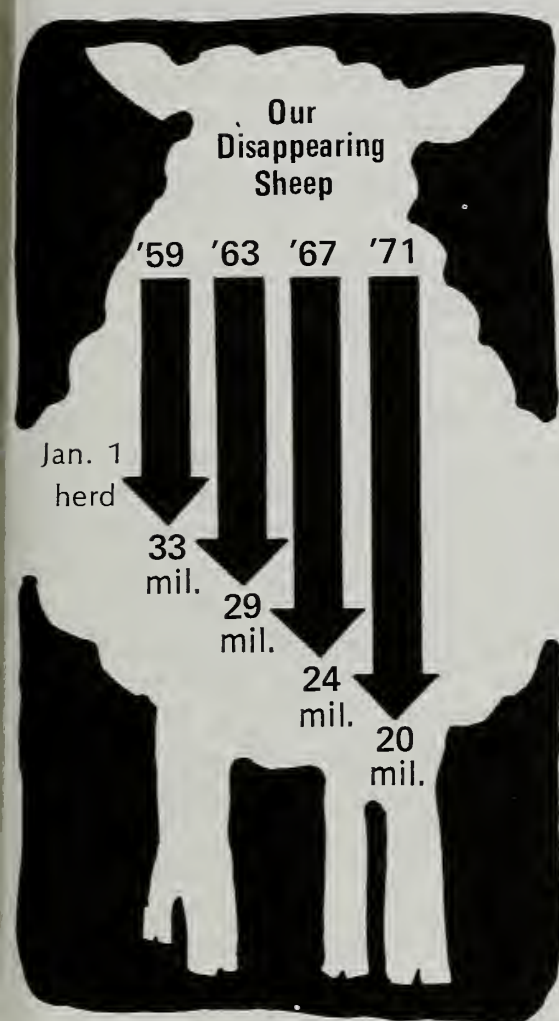
Apparel wool's share of the total fibers market slid from 5 to 6% in 1955–63 to under 3% in 1970. Carpet wool's market share has hovered near 1%, compared with 2–3% in 1955–63.

Manmade fiber's portion meanwhile rose from over a fourth of the total market in 1955–60 to slightly more than half in 1968–70.

Wool has not shared in the growing fiber market partly because of its relatively high price. In 1971—a year when wool prices were unusually low—they ranged 50–60¢ a pound, clean basis, contrasted with manmade polyester staples at 35–40¢ and acrylics at 45–55¢. These two products compete strongly with wool in practically every line of clothing.

All fibers will benefit from increasing populations and consumer incomes in the years ahead. The per person use of apparel wool may recover from the low of 1971. But as things stand, wool will likely lose further ground relative to overall growth in use of fibers.

No one is more keenly aware of this than the sheep growers of America. They agree that something urgently needs to be done to pull the industry out of its slump. They are calling for intensified research into improved wool products and stepped-up promotion and advertising to create and maintain markets. They are confident that better quality wool products, along with reductions in costs of producing lamb and wool, would go a long way in putting the sheep industry back on the road to prosperity. (1)



rose gradually in the last half of the 1950's in the main sheep areas of the 11 Western States plus Texas and South Dakota. Moving into the sixties, however, cattle began to win out as relative prices swung decisively in favor of beef production. And livestock producers in the 1960's increasingly switched the use of their available pasture and feed grains from sheep to cattle production.

A turnabout in the price relationship between sheep and cattle would help stabilize or even increase the sheep inventory. But a turnabout in the near future is not likely in view of the much stronger consumer demand for beef and the competition from imports of lamb.

Farm Real Estate Taxes Set Record \$2.5 Billion

Taxes levied on farm real estate—land and buildings—continued uphill in 1970 for the 38th year in a row. And, according to a recent ERS report, taxes claimed an increasingly bigger slice of net farm incomes.

Levies by State and local governments totaled \$2.5 billion in 1970. This compares with \$2.3 billion in 1969 and \$1.6 billion in 1965. In 1942, when the uptrend began, the tax bill came to only \$407 million.

The increases in tax collections were caused mainly by growing expenditures on school and welfare programs, along with continued reappraisal activities in a number of

States and price increases. Between fiscal 1965 and 1969, educational spending jumped 36% and welfare by over 70%.

As a proportion of net farm income, real estate taxes in 1970 accounted for nearly 13¢ of every dollar earned, up from 11¢ in 1969 and around 9¢ in 1965.

Tax payments are somewhat less when expressed as a share of farmers' personal incomes. In 1970, the farm population earned an estimated \$14.2 billion from farm sources, and \$13.3 billion from nonfarm sources, for a total personal income of \$27.5 billion. Farm real estate taxes took slightly less than 8¢ of each dollar of the total, against 7¢ in 1969 and 6¢ in 1965.

The ERS report also shows wide variation among States in changes in real estate levies between 1969 and 1970. Taxes went down slightly in four states—Alaska, Delaware, Kansas, and Mississippi. Fourteen States had increases of more than 10 percent and two States (Minnesota and Virginia), more than 15%. (3)

Farmers' Goals: Leisure Time Ranks Low

If they had their druthers, a group of farmers in the South Central Plains would prefer greater annual profits to a shorter workweek.

The farmers participated in a 1970 survey designed to reveal how farm operators rank eight basically economic goals. The farms—about 150 in all—were selected at random in a 21-county area spanning parts of northern Texas, northwestern Oklahoma, southwestern Kansas, and southeastern Colorado.

The eight goals included—control more acreage by renting or buying; avoid being forced out of business; maintain or improve family's standard of living; avoid years of low profits or losses; increase time off from farming (leisure time); increase net worth from farm or off-farm investments; reduce borrowing needs; and make the most profit each year (net above total farm costs).

The survey's main finding was that a majority of the farmers didn't seem to agree on any one primary goal. However, "making the most annual profit" was ranked first in importance by 32 percent of the respondents. "Maintaining or increasing family living levels" and "avoiding years of low profits or losses" were given top priority by 27 and 22 percent of the farmers, respectively.

The farmers showed more accord on "least preferred" goals. A majority—57 percent—indicated that "increasing leisure time" was the goal they least desired. Another 32 percent ranked "controlling more acreage" last. (5)

Tracking the Census

Returns from the 1969 Census of Agriculture indicate New York, New Jersey, and Pennsylvania had a decline in farm numbers of 23% since the previous census of 1964. In all, the three States lost some 37,000 farms, bringing the total to around 123,000.

Much of the decline was in farms that were abandoned, or else their sales became too small to be classified in the "farm" category. (The Census Bureau says a farm must sell at least \$50 worth of products a year if it has 10 acres or more; and at least \$250 if it has fewer than 10 acres.) Farms converted to residential and other urban uses in the three States accounted for a relatively low percentage of those farms that ceased to be counted.

Farm numbers also fell in the three Lake States of Minnesota, Wisconsin, and Michigan. They lost a total of 56,000 units between 1964 and 1969—or 16%. The 1969 count was 288,000. In the upper half of this region, farm abandonment helps explain much of the decrease. In the

southern parts, by contrast, many of the farms that went out of business were bought up or rented by other farmers to enlarge their operations.

Census returns from three Corn Belt States—Iowa, Illinois, and Indiana—show a much slower decline in farm numbers than in the Northeast and Lake Regions. In the three Corn Belt States, the total dropped 7½%, from 395,000 in 1964 to 365,000 in 1969. Most farms going out of business were sold or rented to operators of adjoining units.

The amount of land taken out of farming during 1964–69 is considerably smaller in all three regions than what's suggested by the fall off in farm numbers. Total acreage decreased about 1% in the three Corn Belt States, 9% in the Lake States, and 17% in the Northeast.

The three regions also had a steep rise of farms in Economic Class I, those with product sales of \$40,000 or more. The number in this class jumped 92% in the Corn Belt, 117% in the Lake States, 63% in the Northeast. (4)

SOUTHERNERS TAKE STOCK OF SUNFLOWER CROP

A future for sunflowers as a U.S. cash crop? It's too soon to tell, but some farmers in the South are watching this one closely.

In the South, due to a falloff in cotton acreage, there's a lot of oil-seed crushing capacity that goes unused. This equipment for processing cottonseed can readily be adapted for sunflowerseed—if and when it becomes profitable to grow the crop on a large scale.

For sunflowers to take hold in the South, there first must be an increase in yields, a reduction in production costs, a rise in the sale price, or a combination of the three. The yield question has been researched for some years by USDA scientists.

At Texas A&M University, they've developed basic sunflower lines for producing new hybrids using male sterilization and incorporating genes to reverse the sterility; i.e., the same time-saving technique that's used to produce hybrid corn.

These lines have been distributed to members of the U.S. seed industry. They expect to begin field testing the hybrid crosses in 1972, though it may be a couple of years before the seeds are commercially available in any volume.

The big unknown is how the hybrids will respond under varying conditions. However, some of the hybrids promise to yield as much oil as the best varieties in the Soviet Union, by far the world's leading sunflower producer. Seed yield per acre, early experiments indicate, could go as high as 2,500 pounds.

If so, this would be much higher than what sunflowers have been yielding in the South in the few places where they're being grown. In Georgia, for instance, yields average only about 1,200 pounds of seed per acre. At the going price of 3-4¢ per pound of seed, Georgia's sunflowers have not been competitive with established crops.

Due to the low yields making sunflowers noncompetitive with other crops, the South's sunflower area is

less than half what it was in 1968, when approximately 40,000 acres were grown, including about 2,000 acres in Georgia.

Enthusiasm for this relatively new crop has also waned in North Dakota and Minnesota. Farmers there began the first large-scale plantings of high-oil sunflowers in 1967 on about 90,000 acres. By 1970, the harvested area was down to 70,000 acres.

A study by ERS economists stationed in Georgia has estimated sunflowers could in fact compete with cotton if sunflower yielded 1,200-1,450 pounds of seed per acre. This assumes a sale price of 4¢ per pound, and that the competing cotton is produced without set-aside payments where such cotton is now profitable.

To compete with soybeans and corn, sunflower yields would have to rise above 1,450 pounds. About peanuts, the economists say present Government programs for that crop pretty much rule out sunflowers as an alternative.

A switch to hybrids, from the open-pollinated varieties now being used, would doubtless make sunflow-

ers more profitable. The hybrids would cut down on harvesting losses, which in Georgia have averaged 40-50%. This is because the early maturing heads of presently used varieties tend to shatter. With hybrids, most of the heads mature at the same time.

So far there's been wide variation in reported yields in Georgia, with some farmers getting over 2,000 pounds per acre and others well under 1,000.

A good bit of the yield variability has to do with management—the selection of productive soils, proper fertilization and seeding rates, insect control, and timely harvesting.

Looking only at the production possibilities, sunflowers have a somewhat iffy future in this country. They would seem, nonetheless, to have a good market potential.

Demand for edible oils doubled in the past 10 years. And sunflower oil is one of the highest quality cooking oils to be had. As such it can be reheated and reused several times without breaking down or developing an off-flavor—a big plus for use by the growing fast-food industry. Also it's well-suited for use in margarine due to low cholesterol content. (6)

WHAT SUNFLOWERS MUST YIELD TO MATCH LAND RETURNS OF GEORGIA'S CROPS

CROP AND AREA IN GEORGIA		SUNFLOWERS PRICE PER POUND			
		3¢	4¢	5¢	6¢
To Equal Returns From:		SUNFLOWERS POUNDS PER ACRE:			
SOYBEANS: Piedmont		2,618	1,963	1,571	1,309
Southern Coastal Plain		2,516	1,887	1,510	1,258
Southwest Coastal Plain		2,533	1,900	1,520	1,267
CORN: Piedmont		1,952	1,464	1,171	976
Southern Coastal Plain		2,437	1,828	1,462	1,218
Southwest Coastal Plain		2,297	1,723	1,378	1,149
COTTON: Piedmont		1,567	1,175	940	783
Southern Coastal Plain		1,902	1,427	1,141	951
Southwest Coastal Plain		1,949	1,462	1,169	975

For example, sunflowers could compete with soybeans in the Piedmont when sunflowers yield 2,618 pounds per acre and the price is 3 cents per pound.



Feedlots, a Newcomer To Mississippi Delta Area

A decade ago, feedlots were almost unknown in the Mississippi Delta area.

Today, the rudiments are there for what could become large-scale commercial cattle feeding.

To find out more about this emerging industry, ERS and the Mississippi Agricultural and Forestry Experiment Station interviewed 16 of the 20 known feedlot operators in 1970.

They found that average feedlot capacity had reached 373 head in the 1969-70 feeding year, up 65 from 1965-66.

They also found that several operators were feeding corn silage with a high grain content as the sole or primary feed ingredient throughout the feeding period. (This contrasts with the more common system of using silage heavily in the early part of feeding and later substituting grain.) The sole use of silage with a high grain content simplified the feeding and made possible almost total automation.

Corn silage was generally planted in early April and cut in late July at a height of 16.9 inches. On the average, it yielded 37.3% dry matter and 12.2 tons per acre.

Most of the feedlots were finishing yearling cattle for final slaughter. Cattle averaged about 600 pounds when they went into the feedlot and were sold at about 1,000 pounds.

The average feeding period was 202 days, and the average weight gain was 2 pounds a day.

Total capital investments for the feedlots were high, averaging almost \$53,000 each, or about \$141 per unit of capacity.

Labor requirements per lot were also high—about 2 hours a day—for removal of manure from the concrete slab lots prevalent in the Delta area. Another 3 hours were required to feed and check cattle.

The feedlots were operating at about 60% of their floor space capacity at the time of the survey.

Of the 15 feedlot operators reporting corn silage production, all added urea to the silage at the time of ensilaging. The most frequent rate of application was 10 pounds per ton of silage. The average cost of producing an acre of corn silage—considering equipment, fixed and variable costs, labor, and materials—averaged under \$97 an acre in 1970. (7)

Farmers' Bill Up a Fifth For Producing Lint Cotton

The cost of producing a pound of lint cotton was a fifth higher in 1969 than in 1966, as ERS survey shows. Excluding unpaid management, total cost per pound of lint averaged 32¢ in 1969, compared with 26.6¢ 3 years earlier.

Some 3,400 farmers in 20 regions participated in the survey—most recent in a series to determine the cost of producing upland cotton in the U.S.

Much of the cost increase since 1966 reflects reductions in yield from adverse weather in many areas of the Cotton Belt, as well as lower prices received for cottonseed in '69. The average yield reported by farm-

ers in the sample was 455 pounds of lint per acre, down from 518 pounds in 1966.

About 57 percent of the 1969 crop was produced for less than 30¢ per pound. But taking direct cost only (excludes charges for land, farm overhead items, and unpaid management), approximately 80 percent was produced for under 30¢.

Estimates of total production cost ranged from 26.3¢ per pound of lint in the Rolling Plains region of Texas to 46.5¢ in the Southern Coastal Plains. As in the previous surveys—for 1964-5-6—the Mississippi Delta ranked among the lowest-cost regions.

Rankings of the Coastal Prairie and the southern California-southwest Arizona regions changed from below-average levels of cost in 1964-66 to above average in 1969 because of relatively low yields. The Southeast again experienced a generally poor year in 1969 due to unfavorable weather.

In reporting the survey findings, ERS cited a number of production adjustments made by farmers since 1966. (8)

COSTS OF PRODUCING A BALE OF UPLAND COTTON

Item	Average cost per bale ¹		Percentage of total cost ²	
	1966	1969	1966	1969
	Dollars		Percent	
Labor	25.78	23.20	16.2	13.1
Power and equipment	34.54	44.84	21.8	25.3
Materials:				
Seed	3.30	4.44	2.1	2.5
Fertilizer	11.74	11.51	7.4	6.5
Herbicides	3.45	4.81	2.2	2.7
Insecticides and fungicides	5.95	7.17	3.7	4.0
Defoliant	0.93	1.24	0.6	0.7
Other chemicals	0.23	0.21	0.1	0.1
Total materials	25.59	29.38	16.1	16.6
Ginning, bagging, and ties	18.36	19.47	11.6	11.0
Custom services	8.25	10.46	5.2	5.9
Irrigation	8.51	8.30	5.4	4.7
Interest on operating capital	2.12	2.87	1.3	1.6
Total direct costs ³	123.17	138.52	77.6	78.1
Land	22.65	24.40	14.3	13.8
General overhead	12.96	14.40	8.2	8.1
Total cost per bale of lint and associated seed	158.78	177.32	100.0	100.0
Less value of seed produced	-25.94	-17.08	—	—
Cost per bale of lint ⁴	132.84	160.24	—	—
Total cost per pound of lint266	.320	—	—
Direct cost per pound of lint206	.250	—	—
Receipts per pound of lint ⁵305	.360	—	—

¹ 500 pound gross. ² Totals do not necessarily add because of rounding. ³ Includes all cost items other than land, general overhead, and unpaid management. ⁴ Total cost of producing a bale of lint and associated seed minus the value of associated seed. ⁵ Includes support payments in both 1966 and 1969 but excludes diversion payments in 1966.

Substitutes and synthetics are successfully invading several traditional market outlets for agricultural products. Synthetic fibers, noncaloric sweeteners, nonleather shoes, and imitation flavors have already captured widespread consumer acceptance.

More substitute products will enter the market in the coming years.

For example, given conditions most favorable to market penetration by substitutes and synthetics, ERS anticipates that by 1980—

Manmade fibers may garner up to two-thirds of the market for broad-woven fabrics;

As few as 1 in 20 shoes will have leather soles;

Filled and synthetic milks could account for as much as a tenth of the fluid milk market;

Up to 155 million pounds of wool for carpets and apparel may be displaced by manmade fibers.

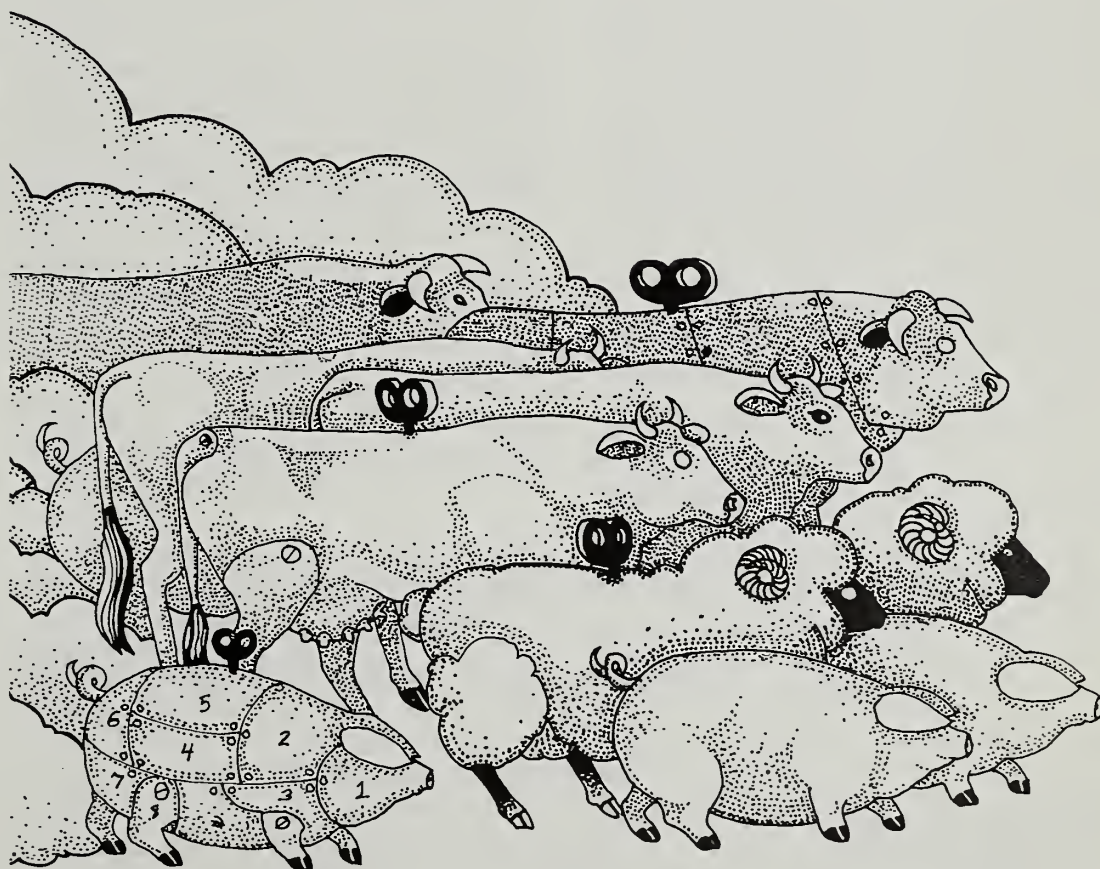
The search for substitutes reflects persistent efforts to either improve on existing products, replace them with better ones, or provide a less expensive product. Consumers are demanding goods that are easier to use and care for, as well as durable and inexpensive. New technologies are making these products possible.

Some of the substitutes are other agricultural products. For example, the market for dairy cream plummeted with the introduction of whipped toppings and coffee whiteners using vegetable oils instead of animal fats. And homemakers are lacing their salads with bits of soy protein that look, taste, and have a texture similar to real bacon.

A wide array of synthetics and substitutes originates from outside of agriculture. Among the most common are polyester fibers, vinyl shoe soles, and petroleum-based soaps. Manmade substitutes have also replaced a host of raw agricultural products formerly used in paints and varnishes, adhesives, inks, paper, etc.

Substitutes have carved out a bigger niche in the nonfood than in the

INVASION BY SYNTHETICS CIRCA 1980



food market. Until recently, penetration in the food market has been largely confined to artificial coloring, flavoring, or similar ingredients that enhance or preserve the inherent qualities of a food.

Of all food products, meat was

once considered to be one of the least vulnerable to substitution. Few people believed its texture, taste, and nutritional qualities could be duplicated. But the new meat analogs—substitutes fabricated from vegetable protein—are coming close. (Cont.)

Meat analogs are prepared primarily from soy protein to resemble specific meats in color, texture, and flavor. They have been on the market for some time.

Price has deterred rapid consumer acceptance of many analogs. To most consumers, analogs appear more expensive than the meats they replace. However, in terms of net utilizable protein, analog prices compare more favorably. Labeling regulations, standards of identity, and tastes may also limit meat analog expansion over the next 5-10 years.

As a result, meat analogs are not expected to capture a significant share of the red meat market by 1980. Major penetration will more likely be by soy protein extenders that replace only part of the meat. Use of extenders will continue to be confined to patties, loaves, and other processed items. At decade's end, soy protein extenders will probably displace considerable quantities of meat in institutional outlets. The retail market will develop more slowly.

ERS economists worked out high and low projections for beef replacement by soy substitutes in 1980. At a low level of market penetration, 1.2 billion pounds of beef—4 percent of estimated production—would be replaced. At the high level, 8½ percent of beef output may be substituted.

One of the impacts of soy substitution for red meats would be the freeing of land resources devoted to

livestock production. The low degree of substitution would open about 1.6 million acres. Under the high projection, 3.5 million acres could be diverted to other uses.

Currently, soy protein substitutes compete with poultry products on a small scale. Market penetration is seen greatest for further-processed items—such as chicken pot pies—that use meat from mature chicken and turkeys. Substitution would be negligible for young chickens, which are primarily fresh-marketed.

At the most, soy proteins would probably substitute for less than .5 percent of estimated production of young chickens in 1980. Similarly, no more than 6 percent of mature chickens and 4 percent of the turkey flock would be displaced.

Substitution in the poultry market will result in a minimal freeing of land resources. Projections range from 13,000 acres at the low level of replacement to 39,000 for the high.

Accelerated use of substitutes could affect the dairy industry more than red meat or poultry producers. Cost, as well as public concern over levels of animal fats in dairy goods, has hastened the incursion of substitutes in the dairy market. Ingredients in most dairy substitutes are less expensive than the products they replace.

Margarine has already captured two-thirds of the table spread market. The use of butter likely will con-

tinue to slip, but at a slower rate. Other substitutes, such as nondairy coffee whiteners, will probably amass growing shares of the light and heavy cream markets. But penetration of the fluid milk market will be slow.

A medium level of substitution in the dairy market could replace about 260,000 dairy cows in 1980. At a high level, as many as 831,000 cows—9 percent of the projected dairy herd—would not be needed.

The extent to which substitutes will displace leather in 1980 is difficult to project. In favor of leather are the known drawbacks in leather substitutes—they don't stretch or "breathe" well; the cessation of production of poromeric materials (plastic-based leather substitutes) by some manufacturers; and the expected abundance of U.S. cattle hides.

On the other hand, vinyls will probably continue to dominate in low-cost shoes and boots. Leather will remain important for shoe uppers when style, comfort, and durability count.

At the high level of substitution in the leather market, only 5 percent of U.S. nonrubber shoes would have leather soles in 1980 as compared with 21 percent in 1965-69. Half would have leather uppers, down from over 70 percent as present. At the lowest level of penetration, leather soles would have 15 percent of the market, and uppers, no change from the late 1960's.

Market conditions may improve slightly for wool. The current decline in total wool use may plateau by 1980. One reason is that wool is still superior to certain synthetics now taking its place in knitted garments.

Projections for 1980 show 96 million pounds of wool displaced by a low level of market penetration by synthetic fibers. At the high level, total wool replaced in garments and rugs could reach 155 million pounds.

Of all agricultural products, cotton has suffered most from the encroachments of synthetics. Further incursions into the cotton market, how-

THREE LEVELS OF SOY SUBSTITUTION: IMPACT ON LIVESTOCK, 1980

Type of livestock	Meat replaced	Head replaced	Percentage of estimated 1980 production
	Million lbs.	Thousands	
Impact of low level			
Cattle and calves	1,166	1,943	4.0
Hogs	602	3,984	4.0
Sheep and lambs	18	357	4.0
Impact of medium level			
Cattle and calves	1,892	3,154	6.5
Hogs	977	6,468	6.5
Sheep and lambs	29	580	6.5
Impact of high level			
Cattle and calves	2,471	4,118	8.5
Hogs	1,275	8,444	8.4
Sheep and lambs	38	757	8.5

ever, will be small relative to those of the past few decades.

Population increases may push cotton consumption to about 9 million bales, up slightly from current levels. Research and promotion may expand cotton's share of the blend market in broadwoven goods as well as cotton's use in knitted fabrics.

In the sweetener market, the projected high level of substitution assumes that new products will fill the void left by the ban on cyclamates. Regardless, total domestic sugar requirements are expected to surpass 1970 needs by 9 percent. A low level of substitution may result in a 15-percent rise in sugar use.

Consumption of fresh citrus drinks is expected to climb 33-35 percent by 1980. Additional market penetration by synthetics will not be significant, as citrus supplies will probably be ample and competitively priced with the substitutes. In the past, synthetics have made their strongest market incursions only after severe freezes have reduced supplies and driven up prices. (9)

Food Chains Favor Fewer Milk Brands

If you've noticed that supermarkets carry fewer brands of milk than they used to, you've noticed a nationwide trend that was especially strong in the 1960's.

The trend is toward the sale of one private label brand—that of the food chain—with maybe one other choice.

Beginning in the 1950's, food chains began this practice because it gives them more control over pricing and merchandising than they have over the milk processors' brands and because it gives them more freedom to change their source of supply.

In a 13-State study in the North Central region, ERS and the cooperating State Experiment Stations found that of the food chains that had centralized milk procurement programs but did not have their own processing plants, 70 percent sold milk under their private label in

1968-69. Well over half of their total fluid milk sales were under their private label.

Private labeling of milk by food chains that don't have their own processing plants is a fairly recent development. All 123 firms in the survey with private labels but without their own fluid milk plants began private labeling after 1951, and the big thrust was in the 1960's.

Food chain management said the private labels built consumer loyalty to the store's brand, enabled stores to buy milk cheaper and to sell it at lower prices than processor brands. Private labels also enabled management to exercise more control over display, advertising, and other promotional policies, and to gain more control over pricing at the supermarket level. (10)

More Apples Dropping Into Cooperatives' Basket

The marketing chain for fresh apples contains fewer links these days.

Under the old marketing system, apples moved from growers through country buyers to terminal markets, on to wholesalers, and finally to retailers.

The trend nowadays is toward direct marketing at shipping points. There the apples are graded, packed, and sold by shippers to large corporate retail chains, several wholesale operations, and various small chains.

Even with stepped-up sales volume at shipping points, individual growers often find themselves with limited bargaining power. So, producers have turned increasingly to cooperative marketing associations.

Latest data indicate that over 20% of the Nation's apple crop is marketed through cooperatives. In the Pacific Northwest—our leading apple region—cooperatives handle close to 50% of the crop.

In 1964, there were 51 apple marketing associations—only three more than in the early 1950's. But the average dollar volume per cooperative jumped 62% in the period. (11)

Wheat Millfeed Use Lags Behind Potential

A new study suggests wheat millfeeds may not be reaching their market potential in livestock rations.

Considering both nutrition and costs, these byproducts of flour milling could be used more in high protein dairy and beef cattle supplements, according to research by ERS and the Agricultural Research Service at the Western Regional Research Laboratory in Albany, Calif.

Wheat millfeeds were also found to be important in the formulation of low energy poultry rations. But to further their use in high energy poultry and swine rations depends on possible improvement in nutrient availability. A research study by USDA is underway to determine whether or not such improvements are economically feasible.

Although wheat millfeeds are used in most types of livestock rations, and comprise a major component of most dairy and beef supplements, the study for the first time evaluates their full economic potential. The millfeeds examined include the predominant types produced and sold in the U.S.—bran, middlings, and mill-run.

The study covers parts of 1966-68 and four cities: Atlanta, Boston, Los Angeles, and the tri-cities area of Davenport, Ia., and Rock Island and Moline, Ill.

Parametric linear programming was used to compute acceptance prices and quantities for millfeeds in different rations when market prices for other ingredients are used. Acceptance prices were then compared to the market price.

For example—in Atlanta in the fourth quarter of 1967—feed compounders would have found middlings highly acceptable for broiler pullet developer. At a minimum level of 2.5 percent of least-cost ration, middlings would be acceptable at a price of about \$78 per ton. The actual market price was \$52 a ton. Thus the intrinsic value of middlings at that time was considerably higher than the market value. (12)

FEDERAL SPENDING

Federal spending in all counties in the United States amounted to upward of \$200 billion in fiscal year 1970. How much went to rural areas?

Part of the answer is contained in a recent ERS report prepared for the Senate Committee on Government Operations. The report's broad objective is to describe the geographic distribution of Federal outlays in the United States and to examine the implications for future economic development.

Specifically, the analysts looked at 242 Federal programs operating in 2,970 counties in the 48 contiguous States. Outlays under these selected programs totaled \$148 billion in fiscal 1970.

A key finding of the ERS study was this: when total outlays were divided by the number of persons living in metropolitan and nonmetropolitan counties, the nonmetro counties got considerably less than the metro areas. The difference was found to be 17%—\$680 per capita for the nonmetro counties as opposed to \$779 in the metro ones.

"Metro counties," are those within the Standard Metropolitan Statistical Areas (SMSA's). SMSA's have at least one city of 50,000 people or more, or twin cities with a combined

population of 50,000 or a contiguous county that is economically integrated with a central city.

The counties in this study were also grouped in six categories by urban orientation—highly urban counties; urban; semi-isolated urban; densely settled rural; sparsely settled rural with urban population; and sparsely settled rural with no urban population.

The yardstick of urban orientation showed that nearly 57% of Federal outlays in fiscal 1970 accrued to the highly urban counties. Only 3.3% went to sparsely settled rural areas with no urban population.

Essentially, the per capita distribution generally favored the more urban-oriented counties.

Federal outlays per person were highest in the semi-isolated urban counties—\$835. The least favored were the densely settled rural counties (\$449 per person) and the sparsely settled rural counties with some urban residents (\$612).

The per capita outlay for the densely settled rural counties was 40% below the national average, and 18% below for the sparsely settled rural counties.

"But more important than the aggregate disparity is the extent to which nonmetropolitan areas fail to

share proportionately in the benefits of specific programs," the ERS report said. One illustration is Federal spending for human resources in counties with pronounced population declines.

Of the 242 programs reviewed by ERS, 106 involved human resource development. Outlays for the selected human resource programs totaled \$55 billion, or 36% of all 1970 outlays for the programs examined. Four-fifths of the \$55 billion went for social security, other retirement benefits, and welfare payments. Less than 5% was for elementary and secondary education.

Declining population counties in the metro group had four times greater welfare payments per capita than the nonmetro ones . . . four times the per capita outlays for health services . . . and three times the outlays for manpower training and development.

Federal funds for elementary and secondary education were about equal in both the metro and nonmetro counties with rapidly declining populations.

Taking all counties, the nonmetro areas got a smaller share of outlays for programs aimed at the poor. About half of all children between the ages of 6 and 17 in families with

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Taking all counties, the nonmetro areas got a smaller share of outlays for programs aimed at the poor. About half of all children between the ages of 6 and 17 in families with

incomes below the poverty line lived in nonmetro counties.

Yet in 1970 nonmetro areas received only 41% of the outlays for Title I of the Elementary and Secondary Education Act, 36% of Headstart Follow Through, 24% of Aid to Families with Dependent Children (AFDC), and 20% of all Child Welfare Service funds.

Old Age Assistance payments appeared to be more equitably distributed than were outlays for the AFDC and child welfare services.

As gaged on the scale of urban orientation, the story for human resources shows that the highly urban counties with sharp population decreases got substantially more money per capita than any other urban orientation group in 1970.

For community development programs—totaling \$26 billion—the outlays were again much higher in metro areas than the nonmetro—\$136 per person versus \$98. Outlays were lowest in densely settled rural counties, only 62% of the national average.

Housing loans, the largest type of community development program, turned up a wide gap between metro and nonmetro counties. The latter had outlays of \$38 per person against \$86 in the metro counties.

While the nonmetro areas had roughly two-thirds of all substandard housing units in the late 1960's, they received only 16% of all housing assistance in 1970.

Earmarked for agriculture, mostly farm programs, and natural resources were \$9 billion. They averaged \$14 per capita in metro counties and \$118 in nonmetro counties. By urban orientation groups, expenditures were substantially higher in the two sparsely settled rural county groups than in any other group. But, such outlays accruing to densely settled rural areas were only slightly above the national average of \$45 per person, and less than one-half of the outlays in semi-isolated urban counties.

Of all Federal programs, the outlays for Defense, the National Aeronautics and Space Administration, and the Atomic Energy Commission far outshadowed the others. They made up \$64 billion, nearly half of all 1970 outlays examined. Over \$8 in \$10 spent for these programs went to metro areas, leaving them with a per capita figure of \$364—twice that of the nonmetro counties.

In the highly urban areas, outlays for these purposes were highest where population was declining the fastest. In the less urban places, big-

ger defense outlays were associated with higher rates of population growth.

Why the differences between Federal outlays in the countryside and the cities?

First off, many Federal programs are directed at groups of people who are not spread proportionately across the country. One wouldn't expect, for example, that Federal money for poverty programs or for farm commodity programs be distributed in the same proportion as the total population. Thus, large volumes of welfare payments go to the low income counties and most of the agriculture payments to sparsely settled rural areas.

Outlays of other Federal programs—like national defense, space exploration, and basic health research—are determined more by the location of the producer of the product than by the location of the beneficiary.

Some disparities in the outlays for any 1 year are explained by the intended impact of the program. Such outlays as those to finance highways or community services don't yield their benefits for many years. It's hard to judge in these cases whether expenditures are inadequate or excessive, or precisely whom they are benefiting. (Please turn page)

Other differences in Federal outlays have to do with the capacity of the recipient to raise the money to match the Federal outlays.

This becomes difficult in many rural areas because of low incomes. In addition, because of sparse populations, the benefits per dollar of expenditure are not as great as in the more urban-oriented areas.

"For some purposes," the ERS report concludes, "Federal outlays may need to be substantially higher in (1) low-income areas where ability to provide services from State and local sources is lower than in higher income areas, (2) areas of low population density which have a more difficult time achieving economies of scale and providing services, and (3) areas where the existing infrastructure (schools, roads, hospitals, etc.) is inadequate." (13)

Farmers Prefer Picking Own Seasonal Laborers

When it comes to hiring seasonal help, many farmers apparently don't deal with a middleman.

In a survey of over 15,200 farms, nearly two-thirds of the operators said they hired most of their seasonal workers as opposed to hiring through labor contractors.

However, the amount of seasonal labor used and the method of hiring workers varied by type of farm, production region, and in some instances by farm size.

Farms using the most seasonal labor were also the heaviest users of the direct-hire method. The largest proportion of direct hiring was on tobacco farms—88 percent. Next were "other field crop" farms (peanuts, potatoes, and sugar beets)

with 85 percent, vegetable farms (78 percent) and cotton (77 percent).

Cash grain and livestock farmers hired the least seasonal labor and generally preferred the contracting method. The contract workers on grain farms mainly consisted of combine crews.

A greater proportion of the farmers in the Northern Plains, Southern Plains, Mountain and Lake State regions used contract labor than in the other regions. In the Southeast, except for the fruit farmers much of the seasonal labor was employed directly by the farm operator.

The size of the farm had some influence on hiring practices: less than a third of the vegetable farmers with less than \$5,000 in sales used contract help, in contrast to 50 percent of the largest farms. On tobacco farms, use of contract workers increased with size. (15)

FEDERAL OUTLAYS IN FISCAL 1970: WHERE THEY WENT

Program	Total	Metro-politan status of recipient counties		Urban Orientation of Recipient Counties					
		SMSA	Non SMSA	Highly urban	Urban	Semi-isolated urban	Densely settled rural	Sparsely settled rural with urban population	Sparsely settled rural without urban population
Dollars per capita									
Human resources:									
Elementary and secondary education	12	11	14	11	12	13	13	15	20
Health services	11	13	7	14	11	7	4	4	2
Social Security and other retirement	182	176	196	178	178	186	185	203	219
Welfare	40	40	41	41	28	49	36	51	54
Employment opportunities and manpower training and development	7	8	5	8	6	6	6	4	8
Total ¹	268	265	276	270	248	278	250	290	318
Community development:									
Urban renewal	10	11	7	12	10	8	6	5	4
Development grants	5	6	3	5	7	3	3	2	3
Development loans	8	5	15	4	8	13	11	21	32
Housing loans	72	86	38	91	58	61	31	34	30
Transportation	28	26	33	25	24	39	25	35	66
Total ¹	124	136	98	138	109	125	77	97	137
Agriculture and natural resources:									
Direct payments and conservation	23	8	58	6	11	58	30	77	137
Loans	16	3	45	1	5	44	19	63	116
Natural resources	6	3	15	2	2	22	3	20	29
Total ²	45	14	118	10	18	125	52	160	281
Defense, NASA and AEC:									
Defense payrolls	111	123	81	119	126	183	17	23	21
Defense contracts	167	207	74	236	121	107	39	38	24
NASA	18	22	7	29	10	2	2	0	0
AEC	13	14	15	13	10	16	11	3	26
Total ²	307	364	177	397	267	308	69	65	72
Total ²	745	779	668	815	641	835	449	612	808

¹ Totals do not equal sum of individual program types because of exclusion of minor program types.

² Because of rounding, individual program types may not sum to total.

In coast-to-coast interviews with over 2,200 homemakers, researchers ferreted opinions and new data on factors that can influence the use and nonuse of dairy foods.

The majority of homemakers failed the fat test in a USDA survey of consumer attitudes toward dairy products.

The survey included over 2,200 homemakers from cities and towns of all sizes, as well as rural areas.

One section of the questionnaire was designed to explore consumers' images of dairy products.

Another series of questions concerned the fat content of whole and low fat milk, American cheese, cottage cheese, ice cream, plus three controls—hard boiled eggs, broiled chicken meat, and broiled packaged ground beef.

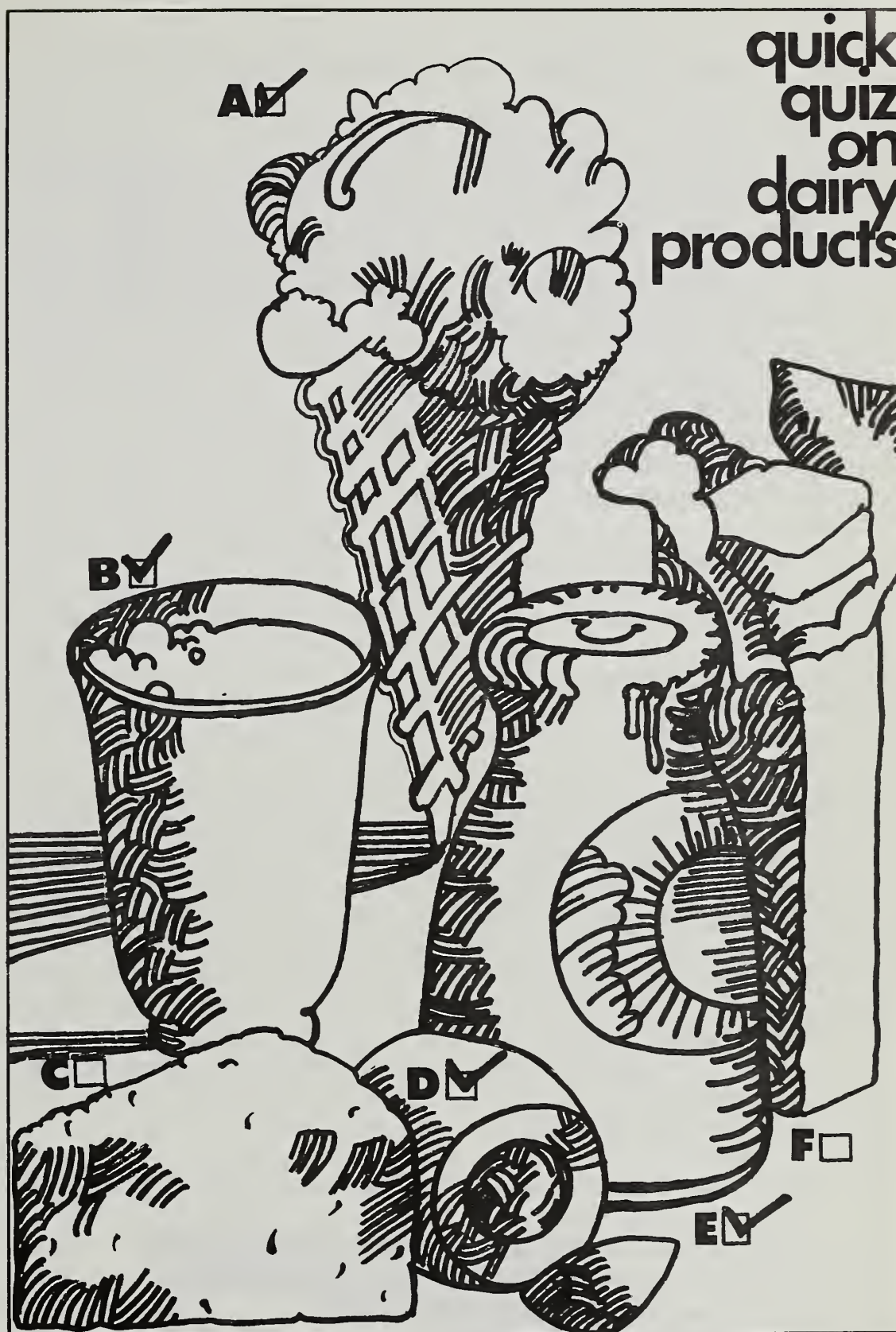
In rating the amount of fat in each of these items, respondents had thirteen choices ranging from "none" on up to "100 percent."

The majority of homemakers gave wrong answers for most of the foods asked about. Talking about the five dairy products only, the responses confirmed what USDA researchers had suspected all along—that many consumers believe some dairy foods have much more fat than is actually the case.

Only about 1 in 10 homemakers in this sample correctly estimated regular whole milk's fat content as being "up to 5 percent." Virtually all others overestimated. And about 3 in 10 thought the answer was 50 percent or greater.

Ice cream is another product whose fattiness tends to be overrated. The correct answer—which on the survey questionnaire was 10–19 percent—was checked by fewer than 1 in 10. About the same proportion scored ice cream too low. Almost 6 homemakers in 10 gave estimates of 50 percent or more.

The fat content of American cheese (30–39 percent on the questionnaire) was also correctly stated by only about 1 in 10 respondents. The others were almost equally split



between those who underestimated and overestimated.

For cottage cheese, 2 in 10 homemakers correctly indicated "up to 5 percent." Most of the others guessed too high, often by a sizable amount.

Respondents scored relatively well on low fat fluid milk—maybe because its fat content is often indicated on the labels. About half chose the correct category ("up to 5 percent"),

1 in 10 selected "none," and about 2 in 10 said low fat fluid milk had 10 percent or more fat.

The homemakers interviewed, incidentally, were pretty weight conscious, as indicated by the replies to this question: "Which of these problems, if any, make a difference in what you or anyone else in your household eats?" The choices were allergies or skin problems; weight-watching or trying to lose weight;

MILK MONEY—MILLIONS POUR IN

Those Grade A milk commercials on national TV are just one piece of the dairy industry's multi-million-dollar package to boost milk sales.

All told, the industry is considering budgets totaling \$23 million in 1972 for nonbrand dairy promotion, advertising, education, and new product development—up from around \$12–\$14 million in the mid-1960's. This doesn't include what private firms plan to spend.

Most money is raised through voluntary deductions, or "check-offs," from producer's milk checks. Also involved are State-appropriated funds and contributions from processors and equipment firms.

Manager of these funds is the United Dairy Industry Association. UDIA's job is to coordinate and strengthen the educational, promotional, and product research programs of the American Dairy Association, National Dairy Council, and Dairy Research Incorporated.

Each of these groups is represented on the board of UDIA, along with processors and producers through their cooperative or-

ganizations.

Declining milk sales have aroused the dairy industry to the need to maintain its markets.

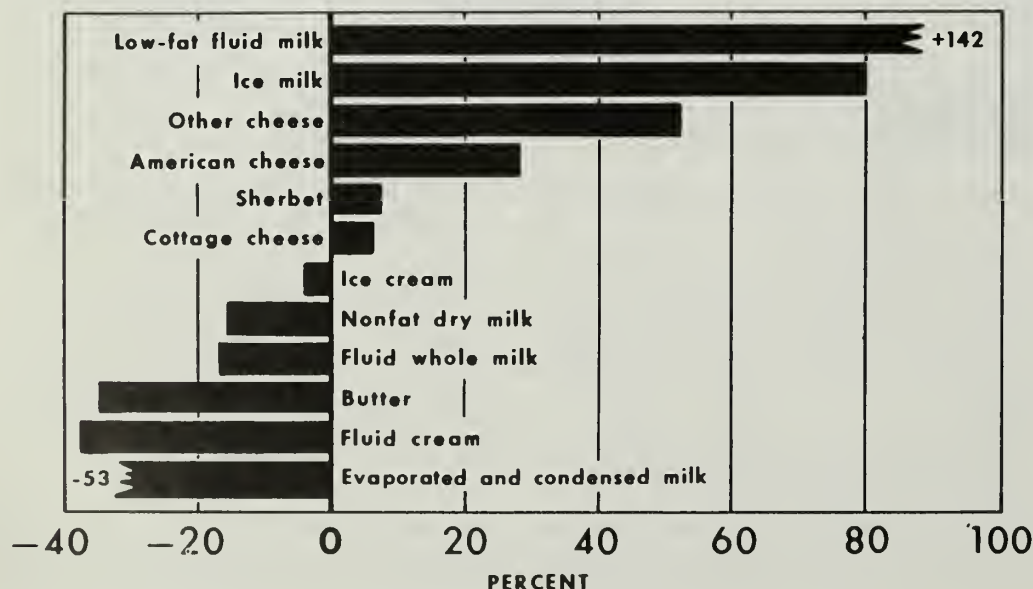
Since 1960, the per person use of all dairy products combined has fallen about 15 percent. Generally, consumption has lagged for the higher-fat dairy products, while use of most lower-fat items has increased or held its own.

Per person use of whole milk, for example, plunged about one-fifth since 1960 and butter sales fell by around 40 percent. Meanwhile, per capita consumption of low fat milk—though starting from a low level—has more than doubled since 1960, and ice milk rose substantially. Cheese sales have also shown considerable growth.

The downtrend in per capita consumption, especially of milk fat, has created serious problems for dairy farmers. They've found it difficult to produce milk of specified fat content.

Partly for this reason, the less productive dairy operators have quit farming. From about a million in 1959, farms selling milk or cream now number fewer than 400,000. (17)

DAIRY SALES: GAINS AND LOSSES DURING 1960–70



digestive problems; and concern about heart disease or circulatory problems.

Almost 4 homemakers in 10 (36 percent) said that weightwatching influenced food choices for their households. About 2 in 10 mentioned problems with digestion. Around a tenth cited heart or circulatory conditions or allergies.

The image of dairy products was tested for popularity, practicality, and food value, as well as health and dietary considerations. Homemakers were asked to select from a list the descriptive phrases they associate with each of 12 foods.

Seven were dairy products (regular whole milk, low fat fluid milk, table cream, ice cream, ice milk, butter, and American cheese). Two were well-known imitations (margarine and nondairy powdered creamer). Three were "controls" to aid in analyzing the data (bread, eggs, and orange juice).

Out of the 12 products, ice cream ranked first in popularity, judging by homemakers' testimony that all age groups like its taste. Among adults, it held a narrow edge over orange juice—54 percent to 48 percent. American cheese, bread, butter, and eggs followed closely. Ice milk and powdered creamer placed near the bottom, but low fat milk scored the lowest on "adults like the taste."

In the "practicality" group, nondairy powdered creamer topped the list on "keeps well." Table cream was the only product that got a poor score on this attribute. Margarine came out best as being a "good value for the money" and "low cost per serving." Table cream and butter got a substantial negative rating on both counts.

In the area of food value, eggs led on "high in protein," American cheese next, and regular whole milk third. None of the other products was associated with protein content by more than 2 in 10 homemakers although even fewer selected "low in protein" for any of these products.

Almost 6 in 10 credited regular

whole milk as being a high source of calcium. No other product was selected nearly as often.

Orange juice led on "high in vitamins" with 70 percent, followed by regular whole milk (about 50 percent). No product was associated with high iron content by more than 1 homemaker in 5.

On "low in calories," low fat fluid milk and ice milk were viewed quite favorably, but the other dairy products were thought to have a high caloric content. The pattern of responses on high or low in fat was quite similar to the pattern for calories.

Low fat fluid milk topped the list on "low in cholesterol," though only 3 homemakers in 10 chose this statement. Margarine ranked second. Four in 10 viewed butter, eggs, and table cream as high in cholesterol, and 2 in 10 gave this rating for ice cream, regular whole milk, and American cheese. (16)

Quinine: Remedy With a Colorful Past

Men along the slopes of the Andes many centuries ago weren't barking up the wrong tree when they used the bark of the cinchona for treatment of malaria.

That bark is still the only natural source of quinine, the specific drug credited with benefiting more generations of people than any other for the treatment of infectious diseases.

Until after World War I and the development of synthetic drugs, quinine was the only effective remedy for malaria. Today it is still used for strains that don't respond to synthetics and in areas where synthetics aren't available. It's also used in small quantities (about 75 parts to a million) in two carbonated beverages—quinine, or tonic, water and in bitter lemon. Another alkaloid of the bark, quinidine, is used for heart patients.

Because of its great importance in malaria treatment, quinine has had quite a colorful past.

One of the more romantic legends—proven untrue 300 years after it began—is responsible for how the genus came to be named *Cinchona*.

The legend begins in Peru in 1630 with the Countess of Chinchon, wife of the Spanish viceroy of Peru, stricken with malaria. Saved by the use of the bark of the tree then called quina, she supposedly brought some of it to malaria-ridden Spain and Italy.

Facts brought out in the 1940's revealed the countess was never stricken with malaria, and that she died en route to Europe. But Linnaeus, who didn't know this when he was giving out botanical names 100 years after the Countess died, named the genus *Cinchona*, probably in her honor, but misspelling her name.

Another story entails how the bitter-tasting quinine first came to be used as a beverage. In India, British troops using quinine for treatment of malaria experimented with the medicant to make a drink—and came up with tonic water.

Most of today's quinine is produced in Indonesia, although several other countries have modest investments in this crop.

Major production shifted to Asia about a century ago. The English and Dutch, both alarmed that the supply of quinine might become exhausted due to 200 years of wanton harvesting of wild cinchona, sent expeditions to the Andes for seeds and plants to start plantations in India and Java. Both expeditions failed because high content quinine species were not brought back.

Then Charles Ledger, an English trader in Peru, sold to the Dutch the seeds that eventually established the plantations in Java. The trees from these high quality seeds were named *Cinchona ledgeriana*. The Dutch, through intensive cultivation, developed a high-content quinine cinchona tree and cornered the market. By World War II, they furnished 90 percent of the world's quinine.

When World War II erupted and

the Japanese occupied Southeast Asia, this supply of quinine was cut off. All-out efforts were made to develop new and more effective antimalarial drugs, a number of which almost completely replaced quinine.

At the same time, the United States undertook a massive propagation program to provide seedlings of high quinine producing cinchona lines in cooperation with several Central American governments. More than a million seedlings of cinchona were grown at the U.S. Plant Introduction Station in Glendale, Md., and shipped to production farms in Central America, especially in Guatemala and Costa Rica.

In the 1960's, quinine made a temporary comeback. Several strains of the malarial parasite had developed resistance to synthetic drugs. They were still sensitive to quinine, and its use was reinstituted in several spots around the world. (19)

Low Stocks, High Prices Sink '71 Fish Sales

There were fewer fish on U.S. platters in 1971, as consumption ebbed for the first time in 3 years. Per capita sales last year totaled 11.2 pounds—down roughly a fifth of a pound from 1970.

Sluggish retail sales are blamed mainly on record high prices. After rising sharply in 1970, retail prices were up 10% in 1971 prior to the wage-price freeze.

Most fish fillets were priced considerably higher than whole broilers and generally above chicken parts. Moreover, abundant pork supplies drove prices for many cuts of pork well below fish prices for much of 1971. Reports of mercury in fish also contributed to consumers' resistance.

Fish sales in institutions and food service outlets were off too. These markets, however, were more affected by short supplies than by high prices. Imported raw materials—over half of U.S. fish needs are imported—were largely unavailable throughout the year. (18)

Through the sixties, Spain built her economy at a fast clip, aided by economic development plans and large tourist revenues. Agriculture, doing better than it had in years, was not able to keep pace.

Nature and man have given Spain a giant headache when it comes to agriculture.

A sheer coastline, rugged mountainous areas, and climatic extremes are what Spain had to start with. And through the centuries the soil has been depleted in many areas by erosion, irregular rainfall, deforestation, and outdated cultivation practices.

Add to that the serious setbacks from the Civil War of 1936-39 and "isolation" during and after World War II—and many small, fragmented farms. Not surprisingly, agriculture is not keeping up with

Spain's growing and changing patterns of consumer wants.

However, the decade of the sixties was a bright one for Spain's economy, and a semi-bright one for its agriculture.

Growth in Spain's gross national product averaged 7 percent a year during the 1960's. National per capita income more than doubled. And despite large trade deficits, Spain's gold and foreign exchange reserves rose twofold in the period to \$1.8 billion by the end of 1970 (\$2.5 billion in September 1971). The decade of rapid expansion was the fruition of work begun back in the 1950's.

In 1955, Spain came out of a period of virtual isolation when it became a full member of the United Nations. In 1959, the government began to extensively overhaul the economy with the help of substantial

overseas credits. Two development plans, one from 1964-67 and the other from 1968-71, set economic growth targets and provided investment capital to stimulate the economy.

The development plans, plus large tourist revenues, set Spain's economy into a gallop.

Meanwhile, its agriculture has been at a trot. Although it's been doing better in recent years, it's being far outdistanced by other sectors of the economy. Spain's economy, which has been traditionally agricultural, is rapidly becoming industrialized.

Agriculture's share in the GNP dropped from 27 percent in 1960 to 16 percent in 1970. Industry's share increased in the same period from 24 percent to 37.

Agriculture's share in the labor force also declined, from 40 percent

SPAIN: A COUNTRY AT WORK



of the labor force in 1960 to 25 percent in 1970. An estimated 200,000 persons left rural areas each year during the sixties, heading for cities and other European countries where expanded industrialization has created better paying jobs.

Government policy, which in the past was to achieve an "adequate" income for every farming family, has been modified to achieve "parity" income with nonfarm families. Through price supports and subsidies, the government is seeking to change the farmers' production patterns to meet domestic and foreign markets. The hope is that with these adjustments, plus higher farm productivity, income will be raised.

One of the major failings in Spain's agricultural community is that it has not adjusted to changing domestic requirements. For instance, with higher income levels, consumers are eating twice as much meat as in 1960. They're using less olive oil and more animal fats and vegetable oils and less wine in favor of soft drinks and beer. Yet Spain continues to produce surpluses of olives and wine, and has to import well over a quarter billion dollars worth of livestock, meat, fats and oils, and feed grains—mainly corn.

Failing to meet domestic demand for many products, Spain went from 1961's favorable agricultural trade balance of \$50 million (custom basis) to a record deficit in 1969 of \$272 million.

Spain's major exports are fruits and vegetables—60 percent of the total value of farm exports—olives (Spain is the world's largest supplier of table olives), wine, olive oil, and rice.

The United States, one of Spain's major trade partners, accounts for about a fourth of Spain's agricultural imports, and buys about \$70 million of its exports, principally olives, olive oil, wine, and spices.

For the future, keystones to Spain's agricultural development include improvements in irrigation, farm structure, land use, and livestock.

Irrigation. Agricultural develop-

ment is limited to a great degree by inadequate rainfall. Dryland crops such as wheat, barley, olives, grapes, and pulses dominate production. However, the government's development plan for 1972-75 calls for additional irrigation of nearly 1 million acres.

Farm structure. Land distribution is very unequal. Sixty-seven percent of the farms in the last census (1962) accounted for 7 percent of the farmland and were less than 5 hectares in size (1 hectare=2.5 acres). Another 1 percent of the farms accounted for 49 percent of the farmland.

In addition, many of the farms are fragmented. This is particularly acute in central and northwest Spain, where the average farm in the 1962 census had 30 plots compared to the national average of 14.

By 1970, the government—under a land consolidation program it has promoted for years—had succeeded in consolidating 2.5 million hectares. A new farm organization promoting joint farming of land by owners has also been successful, with 2,500 production groups and a total of 50,000 members.

Land use. Spain is using price supports and subsidy payments to encourage farmers to produce crops in short supply such as feed grains, and industrial crops such as cotton, sugarbeets, and tobacco.

Livestock improvements. The most dynamic sector of Spanish agriculture, livestock production, has increased an average of 8 percent a year since 1965. Poultry and pork account for the bulk of this growth. More than 7 million hogs were slaughtered in 1970, double the number of 1960. Poultry production rose from 3 percent of total meat production to one-fourth in 1970.

To meet the upsurge in demand for livestock products since 1960, the government had made a concerted effort to increase livestock numbers and productivity. A recent \$25 million loan from the International Bank of Reconstruction and Development is to further this goal. (20)

High Production Costs Plague Dominican's Sugar

If you ask a farm worker in the Dominican Republic what his specialty is, odds are two in three he'd answer "sugar."

The production and processing of sugarcane dominates all other economic activities. The industry employs two-thirds of all persons engaged in agriculture and three-fourths of workers in the manufacturing sector.

Sugar contributes about 15 percent of the Dominican's GDP, and—along with molasses—two-thirds of its export earnings, reaching a record \$210 million in 1970.

About nine-tenths of all exports go to the U.S.—more than half being raw sugar. Besides sugar products, the Dominican Republic is an exporter of coffee, cocoa, and tobacco.

Vital though it is to the national economy, the sugar industry is beset by problems, particularly the high cost of production. Yields generally have been rising as a result of improved cultural practices, but they are still low by world standards.

A substantial part of Dominican agriculture and industry is owned by the government, a legacy from the days of Trujillo's dictatorship. The government operates 12 of the country's 16 sugar mills and estates, which together account for three-fifths of the sugar production. Efficiency in the Dominican mills is hampered by lack of harvest mechanization and improper mill location with respect to production areas, among other things.

Since the Dominican's production costs are normally higher than world market prices, losses are often sustained on sugar sold in such markets.

With the aim of diversification in agriculture, the National Development plan calls for an annual increase in crop production—exclusive of sugar—of 5.5 percent during 1970-74. A new agricultural investment of \$60 million has been earmarked for the program.

Production goals have been set for 22 commodities representing two-thirds of all crop production. Special emphasis is being placed on production of bananas, cotton, and yucca. The program also envisions the creation of a number of dairy and beef cattle farms and provides for their equipment and servicing.

Achieving these targets may prove difficult. The Dominican Republic is one of the few Caribbean areas where cropland is commonly underutilized. Only 2.2 million hectares (1 hectare=2.5 acres), or less than half of the country's 4.8 million hectares, is in farms. Less than one-third of farmland is in crops.

Concentration of ownership has been a key factor in retarding development. Less than 2 percent of the farms control more than half the farmland. Arable land, often held in these large estates, is frequently not used intensively. Good cropland may be pastured and marginal lands cropped. Double-cropping opportunities tend to be overlooked. Meanwhile, productive areas remain undeveloped because access roads, irrigation, and other needs are lacking.

Moreover, funds and credit are generally not available. Only about 5 percent of farmers in 1968 were able to obtain production loans from the government's Agricultural Bank.

The short-term outlook for Dominican agriculture is reasonably bright, however. Market prospects for export crops, especially coffee, cocoa, and tobacco, are relatively favorable. The immediate years ahead should also produce gains in the mining, tourism, and light industry sectors. These would help raise the standard of living and help reduce unemployment.

The long-run economic view is less optimistic. Difficulties in marketing sugar appear imminent. The Dominican Government is seeking a larger quota in the world sugar market in order to forestall a serious buildup in stocks. But sharp reductions in production costs will be necessary in order to compete in world markets.

Dominicans will also have to con-

tend with a serious unfavorable balance of foreign trade, which continues to widen despite government austerity measures. (21)

Germans Join Bandwagon For Convenience Foods

The market for processed foods in West Germany is growing up as eating preferences lean more and more toward convenience foods.

While the country's industrial progress has been phenomenal in the postwar period, the switch of diets has been just as extraordinary for the average West German.

Increasingly affluent German families are buying higher quality and more expensive foods. They are also eating a greater variety, including more imported products, and are becoming more selective in their food shopping habits.

Consumption of such staples as potatoes and bread have declined in recent years in favor of meats, cheese, fresh and frozen fruits and vegetables, and prepared foods. During 1958-68 for example, the per capita consumption of chicken more than doubled, whereas potato use dropped one-half and bread by one-third.

Sales of processed foods since 1960 have risen twice as fast as total food expenditures.

Germany's leading food retailers are constantly on the lookout for new food products that meet rising German consumer demands for convenience, health, quality and variety. For instance, in 1969 German food processors offered retailers more than 1,100 new products and 1,400 in 1970.

Nearly all of Germany's 86,000 self-service food stores now sell frozen foods and most retailers are increasing the number and selection of items in their frozen food assortments.

Helping to boost purchases of frozen foods has been the growth in sales of home freezers. About a fifth of all households had one in 1970. That year German appliance dealers

sold about 630,000 home freezers and almost 2 million refrigerators of which over half had frozen food sections.

Nearly \$700 million of U.S. food and farm products—or about 11 percent of Germany's total agricultural imports—were sold to that country in 1970. (22)

Soviet Cotton Makes a Comeback

With a record cotton crop last year, the USSR displaced the U.S. as the world's leading cotton producer. It was the second year in a row that the Soviet Union could boast a bumper crop. At recent ginning rates, total yield from the 1971 output could reach 11.1-11.2 million bales.

Before rebounding in 1970, cotton production in the USSR stagnated for 3 years. Cotton stocks dwindled, and net exports fell off in 1969 and 1970.

To date, cotton exports haven't shown any sign of expansion. Presumably, the Soviets used the large 1970 outturn—10.8 million bales—to replenish drained domestic supplies. A second bumper crop in 1971, however, places the USSR in a position to sharply increase its net exports.

The record-breaking crop for 1971 was in doubt early in the season when a shortage of irrigation water threatened to reduce yields in the important Central Asian cotton region. The crisis was averted however, by construction of temporary canals and drilling of hundreds of artesian wells.

Favorable weather conditions contributed to the 2 years of record output. Cotton crops were planted early and matured early, allowing for a long harvest season before the fall rainy season.

In addition, cotton producers expanded their growing area, applied more fertilizer, and stepped up use of alfalfa in rotation to combat cotton wilt. An increase in domestic cotton prices during 1969 spurred the larger inputs. (23)

(Continued from page 3)

ing the general business depression, the large supplies of wheat, cotton, and certain livestock products, the disturbed conditions in various producing areas resulting from the drought (worst in 29 years), unusually severe import restrictions imposed by foreign countries against agricultural products, and the maladjustment of price relationships accompanying the recent worldwide decline in all commodity prices."

In November 1942, the Outlook Conference reported: "Total war dominates the farm outlook for 1943 . . . American soldiers will be adequately fed and clothed. Essential supplies will be carried to our allies. Farmers will work harder than ever before, and in return they likely will receive the greatest income in their history."

By 1940, outlook information was

also being printed in separate monthly reports. With a couple of exceptions, these are the very same reports published today by the Economic Research Service—the *Demand and Price Situation*, the *Farm Income Situation*, the *Feed Situation*, the *Livestock and Meat Situation*, and so forth. Outlook work by 1940 had become a year-round service to agriculture.

Also by 1940 representatives of the State experiment stations were playing a leading role in developing outlook materials, and in the National Outlook Conferences. The Extension Service, it was recognized, afforded the most effective channel for disseminating national outlook information.

In an earlier move to adapt national outlook findings to local situations, regional Outlook Conferences were begun in the early 1930's. These were

later discontinued, but after World War II were resumed and continue to be held until this day.

The chartbooks now published by the Economic Research Service date back to the thirties too.

Of course, the issues before this year's National Agricultural Outlook Conference are quite different from those facing the conferees of decades ago. Instead of lend-lease and the soil bank, there will be mention of such concerns as the set-aside program, eutrophication and agricultural pollution, growth of the European Community, and devaluation of the dollar.

But not unlike decades earlier, the task of the 1972 outlookers is to interpret the developments as they see them, and to pass their observations to the ultimate decision maker, the American farmer himself.

Recent Publications

THE AGRICULTURAL ECONOMY AND TRADE OF THE UNITED KINGDOM. James R. Horst, Foreign Regional Analysis Division. ERS-For. 317.

The U.K.'s gross agricultural product, valued at \$2.9 billion in 1969, is only 3 percent of that country's gross domestic product. Only 3 percent of the work force is engaged in agriculture, the lowest percentage for any West European country. Nonetheless, more than 80 percent of the total land area is devoted in some way to agriculture.

USE OF WHEAT FOR FEED IN THE EUROPEAN ECONOMIC COMMUNITY WITH PROJECTIONS TO 1975. Reed E. Friend, Foreign Regional Analysis Division, FAER 74.

Agricultural policies pursued by the European Economic Community (EEC) have resulted in significant surpluses of soft wheat. This report discusses the EEC use of wheat for feed. Topics included in the study are the EEC's grain denaturing regulations, factors affecting the use of wheat for feed, the impact of wheat on feed grain requirements, and projections to 1975.

The publications listed here are issued by the Economic Research Service and cooperatively by the State universities and colleges. Unless otherwise noted, reports listed here and under Sources are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained only by writing to the issuing agencies of the respective States.

WORLD MONETARY CONDITIONS IN RELATION TO AGRICULTURAL TRADE. O. Halbert Goolsby and Carolee Santmyer, Foreign Development and Trade Division, WMC-1.

This is the first semiannual issue of the publication previously published as the *Foreign Gold and Exchange Review*. The purpose of this report is to provide economic intelligence on international monetary and financial affairs for people concerned with promoting U.S. agricultural products.

THE AGRICULTURAL ECONOMY AND TRADE OF THE FEDERAL REPUBLIC OF GERMANY. Cynthia Ann Breitenlohner, Foreign Regional Analysis Division. ERS-For. 325.

West German agriculture, although handicapped by small farms and fragmented land holdings, expanded output in the past decade—chiefly in wheat, barley, pork, and poultry. West Germany's 1.3 million farms average only 9.6 hectares (about 24 acres) each, and are too small for modern agricultural technology. Agricultural policy has been increasingly directed toward increasing size of farms and raising farm income.

ORGANIZATION OF TOBACCO FARMS UNDER ACREAGE AND ACREAGE-POUNDAGE CONTROL PROGRAMS, CENSUS SUBREGION 17, NORTH CAROLINA. Bob Davis and Loren A. Ihnen, North Carolina State University, cooperating with Farm Production Economics Division. EIR 24.*

This is the third in a series of reports prepared from a study of the economics of tobacco production in

the Coastal Plains of North Carolina. This report contains a description of some changes occurring in the agriculture of the study area from 1964 to 1967. Among other findings, tobacco varieties changed, plant population per acre and fertilization levels were reduced slightly, but use of most technical innovations, such as new chemicals, remained constant.

PRICES, MARGINS, AND FARM VALUE FOR CANNED AND FROZEN FRUITS, VEGETABLES, AND JUICES SOLD IN SELECTED MARKETS, 1965/66-1969/70. Alfred J. Burns and Clive E. Johnson, Marketing Economics Division. Stat. Bull. 477.

Prices and margins for 21 processed fruit and vegetable products are examined. Retail prices, processor prices, farm values, and the total marketing margin increased for most processed fruits and vegetables during 1965/66-1969/70.

MACHINERY INVESTMENT PRACTICES OF WASHINGTON FARMERS. Dwaine E. Umberger, Farm Production Economics Division; Norman K. Whittlesey and M. E. Wirth, Washington State University. Washington Agricultural Experiment Station Bulletin 737.*

This report contains responses of Washington farmers to questions about their machinery management practices. Unreliability of old machines was the most common reason farmers gave for replacing a machine. When replaced, most farmers bought a new machine. Only 39 percent of farmers leased machines while 90 percent at one time or another utilized custom hire services.

A CASE STUDY OF FOOD DATING IN SELECTED CHICAGO SUPERMARKETS. Eileen F. Taylor, Marketing Economics Division. MRR 943.

This study is part of a research program begun by ERS in July 1970

to review information about food stability and food product dating, and to examine possible dating methods and their implications for processors, retailers, and consumers.

LAND USE IN THE SOUTHERN MISSISSIPPI ALLUVIAL VALLEY, 1950-69: AN ANALYSIS BASED ON REMOTE SENSING. H. Thomas Frey and Henry W. Dill, Jr., Natural Resource Economics Division. Agricultural Economic Report 215.

A comparison of special small-scale (1:125,000) aerial photographic imagery with conventional imagery revealed major shifts in land use during 1950-69. Around 3.8 million acres of forest, 0.2 million acres of grassland, and 0.1 million acres of miscellaneous acres were converted to cropland. Cropland represented 57 percent—13.7 million acres—of the 24 million acres in the valley in 1969. Forestland totaled 7.5 million acres, about 31 percent of the total.

Article Sources

State publications indicated by (*) may be obtained only from the experiment station or university cited. Manuscripts and special material are usually available only on request to authors.

1. and 2. Larry B. Clayton, ESAD. "Trends in Wool Production and Marketing and Their Implications" (speech at The Sheep Industry Wool Symposium, Texas Tech University, Lubbock, Texas, November 1971); and Amos D. Jones, MED. "Wool Marketing Alternatives From Producer to Mill" (speech at The Sheep Industry Symposium).
3. Thomas F. Hady, EDD. *Farm Real Estate Taxes: Recent Trends and Developments*, RET 11.
4. Edwin G. Strand, FPED (special material).
5. Wyatte L. Harman and Roy E. Hatch, FPED, Vernon R. Eidman and P. L. Claypool, Oklahoma State Univ. An Evaluation of Factors Affecting the Hierarchy of Multiple Goals (manuscript).
6. William Givan, FPED. Economics of Producing Sunflowers in Georgia (manuscript).
7. Fred T. Cooke, Jr., FPED, and J.M. Anderson and William A. Pund, Mississippi Agricultural and Forestry Experiment Station. Beef Cattle Finishing in the Mississippi Delta (manuscript).
8. I. R. Starbird and B. L. French, FPED. *Costs of Producing Upland Cotton in the United States, 1969, A Preliminary Report*.
9. William W. Gallimore, MED. Synthetics and Substitutes for Agricultural Products to 1980 (manuscript).
10. Richard F. Fallert, MED. *A Survey of Central Milk Programs in Midwestern Food Chains*, MRR 944.
11. Ben W. Huang, ESAD. "The Changing U.S. Apple Industry," *Fruit Situation*, TFS 181, November 1971.
12. Robert V. Enochian, MED, and Donald D. Kuzmicky and George Kohler, Agricultural Research Service, Albany, California. Wheat Millfeeds in Livestock Rations: An Economic Analysis, AER
13. Fred K. Hines, EDD. *The Distribution of Federal Outlays Among United States Counties* (prepared for the Senate Committee on Government Operations, January 1971).
15. Walter E. Sellers, Jr., FPED. Methods of Hiring Seasonal Farm Labor (manuscript).
16. Margaret Weidenhamer, Statistical Reporting Service (speech at Convention of Milk Industry Foundation—International Association of Ice Cream Manufacturers, San Francisco, Calif., November 1971).
17. Anthony C. Mathis and Robert R. Miller, ESAD. *Dairy Situation*, DS-338, November 1971.
18. Donald R. Whitaker, Dept. of Commerce. *National Food Situation*, NFS 138, November 1971.
19. John L. Creech, ARS; Robert C. Moncure, formerly FRAD; Schweggs, Ltd., Stamford, Conn. (special material) also, "Quinine: The Story of Cinchona," *Scientific Monthly*, July 1943.
20. James Lopes, FRAD. The Agricultural Economy and Trade of Spain (manuscript).
21. Wilbur F. Buck, FRAD. Agriculture and Trade of the Dominican Republic (manuscript).
22. Norris T. Pritchard and W. Scott Steele, FDTD, and William P. Huth, FAS. Food Marketing in West Germany (manuscript).
23. Angel O. Byrne, FRAD (special material).

NOTE: Unless otherwise indicated, authors are on the staff of the Economic Research Service (ERS) with their divisions designated as follows: Economic and Statistical Analysis Division (ESAD); Economic Development Division (EDD); Farm Production Economics Division (FPED); Foreign Development and Trade Division (FDTD); Foreign Regional Analysis Division (FRAD); Marketing Economics Division (MED); and Natural Resource Economics Division (NRED).

Economic Trends

Item	Unit or Base Period	1967	Year	1970	Sept.	1971	Nov.
				Nov.		Oct.	
Prices:							
Prices received by farmers	1967=100	—	110	106	111	113	114
Crops	1967=100	—	100	102	104	106	108
Livestock and products	1967=100	—	118	109	117	118	119
Prices paid, interest, taxes and wage rates	1967=100	—	114	115	120	121	121
Family living items	1967=100	—	114	115	120	120	120
Production items	1967=100	—	110	111	116	116	117
Ratio ¹	1967=100	—	96	92	92	93	94
Wholesale prices, all commodities	1967=100	—	110.4	110.9	114.5	114.4	114.5
Industrial commodities	1967=100	—	110.0	111.3	115.0	115.0	114.9
Farm products	1967=100	—	111.0	107.0	110.5	111.3	112.2
Processed foods and feeds	1967=100	—	112.0	111.7	114.6	114.1	114.4
Consumer price index, all items	1967=100	—	116.9	118.5	122.2	122.4	122.6
Food	1967=100	—	114.9	114.9	119.1	118.9	119.0
Farm Food Market Basket: ²							
Retail cost	Dollars	1,081	1,223	1,201	1,251	1,245	1,248
Farm value	Dollars	419	476	438	473	475	484
Farm-retail spread	Dollars	662	747	763	788	770	764
Farmers' share of retail cost	Percent	39	39	36	38	38	39
Farm Income: ³							
Volume of farm marketings	1967	100	104	137	120	154	156
Cash receipts from farm marketings	Million dollars	42,693	49,231	5,153	4,794	6,105	5,100
Crops	Million dollars	18,434	19,636	2,884	2,127	3,426	2,600
Livestock and products	Million dollars	24,259	29,595	2,269	2,667	2,679	2,500
Realized gross income ⁴	Billion dollars	49.0	56.6	—	59.3	—	—
Farm production expenses ⁴	Billion dollars	34.8	40.9	—	43.0	—	—
Realized net income ⁴	Billion dollars	14.2	15.7	—	16.3	—	—
Agricultural Trade:							
Agricultural exports	Million dollars	—	7,174	726	750	466	629
Agricultural imports	Million dollars	—	5,667	443	651	302	298
Land Values:							
Average value per acre	1967 = 100	—	⁶ 118	⁷ 117	—	—	⁸ 121
Total value of farm real estate	Billion dollars	—	⁶ 210.7	⁷ 208.9	—	—	⁸ 214.0
Gross National Product: ⁴							
Consumption	Billion dollars	793.9	974.1	—	1,060.8	—	—
Investment	Billion dollars	492.1	615.8	—	67.25	—	—
Government expenditures	Billion dollars	116.6	135.3	—	153.6	—	—
Net exports	Billion dollars	180.1	219.4	—	234.2	—	—
	Billion dollars	5.2	3.6	—	0.5	—	—
Income and Spending: ⁵							
Personal income, annual rate	Billion dollars	629.3	803.6	815.7	871.5	872.5	876.0
Total retail sales, monthly rate	Million dollars	26,151	31,294	31,294	35,219	34,846	—
Retail sales of food group, monthly rate	Million dollars	5,759	7,176	7,390	7,516	7,416	—
Employment and Wages: ⁵							
Total civilian employment	Millions	74.4	78.6	78.6	79.5	79.8	80.0
Agricultural	Millions	3.8	3.5	3.4	3.4	3.4	3.4
Rate of unemployment	Percent	3.8	4.9	5.9	6.0	5.8	6.0
Workweek in manufacturing	Hours	40.6	39.8	39.6	39.5	39.8	40.1
Hourly earnings in manufacturing, unadjusted	Dollars	2.83	3.36	3.39	3.60	3.60	3.60
Industrial Production: ⁵	1967 = 100	—	107	103	106	106	107
Manufacturers' Shipments and Inventories: ⁵							
Total shipments, monthly rate	Million dollars	46,458	54,429	52,562	57,892	57,402	—
Total inventories, book value end of month	Million dollars	84,563	100,476	100,927	110,266	100,579	—
Total new orders, monthly rate	Million dollars	46,707	53,866	52,463	57,322	57,237	—

¹ Ratio of index of prices received by farmers to index of prices paid, interest, taxes, and farm wage rates. ² Average annual quantities of farm food products purchased by urban wage-earner and clerical worker households (including those of single workers living alone) in 1959-61—estimated monthly. ³ Annual and quarterly data are on 50-State basis. ⁴ Annual rates seasonally adjusted third quarter. ⁵ Seasonally adjusted. ⁶ As of November 1, 1970. ⁷ As of March 1, 1970. ⁸ As of March 1, 1971.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Monthly Retail Trade Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

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